NOKIA 3105

RH-48

Transceiver characteristics:

- High resolution 4096 color display (128x128 pixels)
- CDMA800 SingleBand engine supporting CDMA2000
- Up to 16 Polyphonic ring tones (MIDI) can be heard in the 25 supported polyphonic ring tone options
- User-changeable Xpress-on™ Front and Battery covers
- See and be seen in the dark: phone covers support glow-in-the-dark light effects to attract attention (must charge the covers with light first!)
- Integrated Handsfree Speaker
- 4-way scroll key for easy navigation

Transceiver with BL-5c 850mAh Li-Ion battery pack

Talk time	Standby	Note
Up to 4h	Up to 14 days	Depends on network parameters

SERVICE MANUAL

Service Level 1&2

Copyright © Nokia Corporation. This material, including documentation and any related computer programs, is protected by copyright controlled by Nokia Corporation. All rights are reserved. Copying, including reproducing, storing, adapting or translating, any or all of this material requires the prior written consent of Nokia Corporation. This material also contains confidential information, which may not be disclosed to others without the prior written consent of Nokia Corporation.

TABLE OF CONTENT

Page

1. INTRODUCTION 3
2. GENERAL REPAIR INFORMATION 4
3. PATHFINDER FOR WORKSHOP STAFF 5
4. EXPLODED VIEW AND COMPONENT DISPOSAL 6
5. SPARE PARTS LIST 7
6. SERVICE TOOLS 8
7. SW-UPDATE 10
8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT) 11
9. LEGEND FOR QUICK TROUBLE SHOOTER 14
10. QUICK TROUBLE SHOOTER PART 1 15
11. QUICK TROUBLE SHOOTER PART 2 16
12. GONOGO TEST 17
13. BATTERY TEST 18
14. FOR FORWARDING OF REPAIRS 19
15. ESD PROTECTION REQUIREMENTS 20

CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	20.10.2004	Initial draft
Approved	1.0	25.10.2004	Approval

Copyright 2004 © Nokia Corporation

1. INTRODUCTION

The purpose of this document is to help Nokia service levels 1 and 2 workshop technicians to carry out service to Nokia products. This Service Manual is to be used **only** by authorized Nokia service suppliers, and the content of it is confidential. Please note that Nokia provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist.
If you find any errors or if you have further suggestions, please notify Nokia using the address below:
mailto:cc-ts-rc.documentation@nokia.com

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI–SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti–static workstation and that an anti–static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re–fitted after servicing and alignment. Ensure all cables and wires are repositioned correctly.

Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Supplier has to take care of all precautions, which are mentioned in the service level related "Service Partner Requirements", available on Nokia Partner Web Site/Nokia Online. Also see ESD Protection Requirements in this Service Manual.

Copyright 2004 © Nokia Corporation

2. GENERAL REPAIR INFORMATION

In this section the technician will get some general hints how to carry out repairs:

- To familiarize oneself with Nokia product read the tutorials or user guide on www.nokia.com -->Support--> Phones, by selecting the Phone Model.
- Before starting the repair you must take care of ESD precautions like being in your ESD Protected Area and connecting your wristband.
- Use gloves to avoid corrosion and fingerprints.
- Protect windows and displays with a film to avoid dust and scratches.
- When cleaning the LCD Module any lint free cloth can be used (e.g. Micro-Fibre cloth).
- When cleaning the pads you have to use a soft cloth/ESD brush and Isopropanol. It is not allowed to use a glass fiber pencil because it scratches the surface and will lead later on to corrosion.
- Mechanical parts (except shielding lids and bent parts), which didn't repair the failure, can be reused, if they are not soldered.
- When removing the shielding lids make sure to replace them with new ones, otherwise the high-frequency leakage can have an influence on the device.
  Always use original Nokia spare parts.
  Check the soldering joints of the parts, which are concerned regarding the indicated error (e.g. soldered connectors or switches) and resolder them if necessary (Level 2 only).
  Remove redundant soldering flux after repair.
- Meet the torque requirements when assembling the unit (see also the document "torques for transceiver assembly" on Nokia Partner Web Site/ Nokia Online).
- Always use your own equipment for testing where you are sure that it works. E.g. if the customer complains about charger function, please test the phone with your own charger to be sure if phone or charger causes the malfunction.
- When doing the fault log entries, always note the Item code, which caused the malfunction. Also, fill in the appropriate part code from the assembly, if needed.
- Please be aware that some malfunctions could be software related and solved by an update.

- There are several documents available on PWS/NOL - CarePoint, which have to be followed:

- First, take care for the latest content pages of Service Bulletins, which are always available for each folder on Nokia Partner Web Site/Nokia Online. This is also important to recognize, if existing documents have become invalid.

- The service level indicator at the bottom of each document tells the appropriate destination.

Downloads > Support Library >

1. **Instructions**
2. **General Service Bulletins**
3. **Product related documents**
4. **Spare Part Service Bulletins**
5. **Service Tools Service Bulletins**
6. **Common Softwares Service Bulletins**
   etc,...

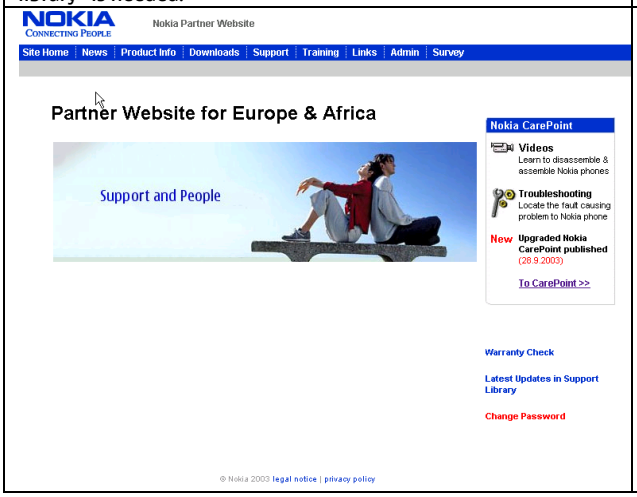
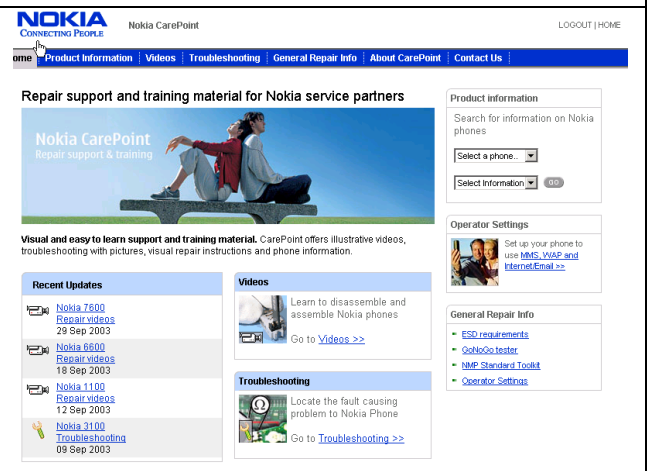
Use General SB-217 as a reference or overview.

Please also check Nokia Partner Web Site (PWS)/Nokia Online (NOL) for latest news and files on a regular basis.

Copyright 2004 © Nokia Corporation

3. PATHFINDER FOR WORKSHOP STAFF

In addition to the information in this Service Manual, there are several instructions and information, which have to be followed.
Main documentation database is Nokia Partner Website / Nokia Online, which refers also to Nokia Care Point with the purpose of serving different multimedia content, like video clips or interactive tutorials.

Nokia Partner Web Site		Nokia Care Point (access through Partner Web Site)
Nokia Partner Web Site for EMEA region is the most important document database for all service suppliers (level 1-4). All service relevant information like e.g. Service Manuals, Service Bulletins or general instructions are available. Content is restricted according your access level. To be kept up-to-date also concerning newest software updates, a daily check of "latest updates in support library" is needed.		Nokia Care Point is repair support and training channel for Nokia service suppliers (mainly for service levels 1 and 2). By providing visual and easy to learn support and training material, such as illustrative repair videos, troubleshooting with pictures, product information and general repair information, Nokia Care Point offers user-friendly channel for service suppliers to learn technical issues.
		

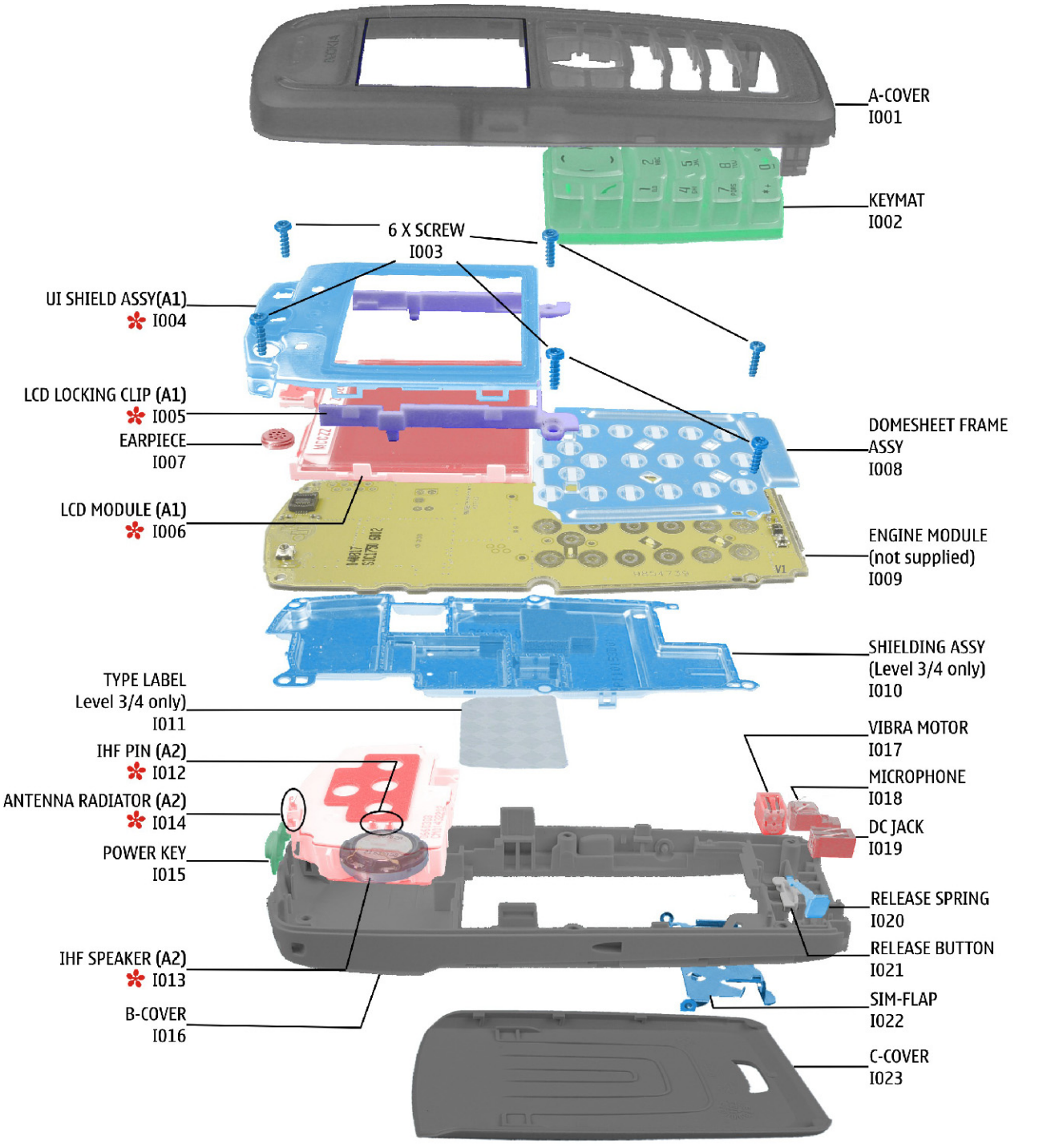
It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see **"Latest Updates in support Library"**). Every new information has to be processed and implemented as soon as possible.
When logged into PWS/NOL you can also find needed information in different folder like:

Downloads
→ Support Library
→
- Accessories
- Battery Tester
- Common Software
- Flashing Tools
- General -> Instructions
- GoNoGo Tester
- Service Tools
- Tester Support
- Wintesla
- Products (Service Manuals, Service Bulletins)

To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

Copyright 2004 © Nokia Corporation

4. EXPLODED VIEW AND COMPONENT DISPOSAL



ELECTRO SILICONE METAL PLASTIC PWB COVER

Recommendation for the ecologically friendly disposal of components. Colorized components show the different categories. See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on PWS/NOL.

Copyright 2004 © Nokia Corporation

5. SPARE PARTS LIST

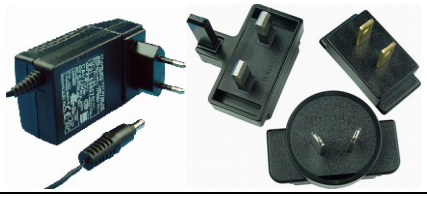
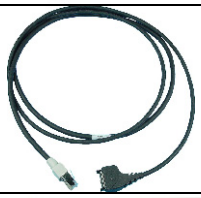
Please exchange this page (placeholder) with latest corresponding Service Bulletins (spare parts, SWAP units and service tools) from PWS/NOL!

This will ensure, that you are using up-to-date order codes only.

Therefore Service Bulletins have to be checked from PWS/NOL on daily basis.

Copyright 2004 © Nokia Corporation

6. SERVICE TOOLS

	FLS-4S incl. ACF-8, Driver and User Guide is a dongle and flash device incorporated into one package, developed specifically for POS use.
	**ACF-8** Universal Power Supply is used to power FLS-4S.
	Internal Battery BL-5C Inserted under the back cover, this Li-Ion 850 mAh battery provides power in a lightweight package.
	Stand DCV-14 Provides easy charging and convenient data synchronization with a compatible computer using the Connectivity Adapter Cable DKU-5 (supplied separately).
	Travel Charger ACP-12 Small and lightweight for fast charging.
	Headset HS-5 An easy and convenient handsfree solution with remote control.
	**CA-22DS** Service Cable is used to connect FLS-4S with the phone..
	RJ-32 Soldering Jig

Copyright 2004 © Nokia Corporation

0772040 NMP Standard Toolkit

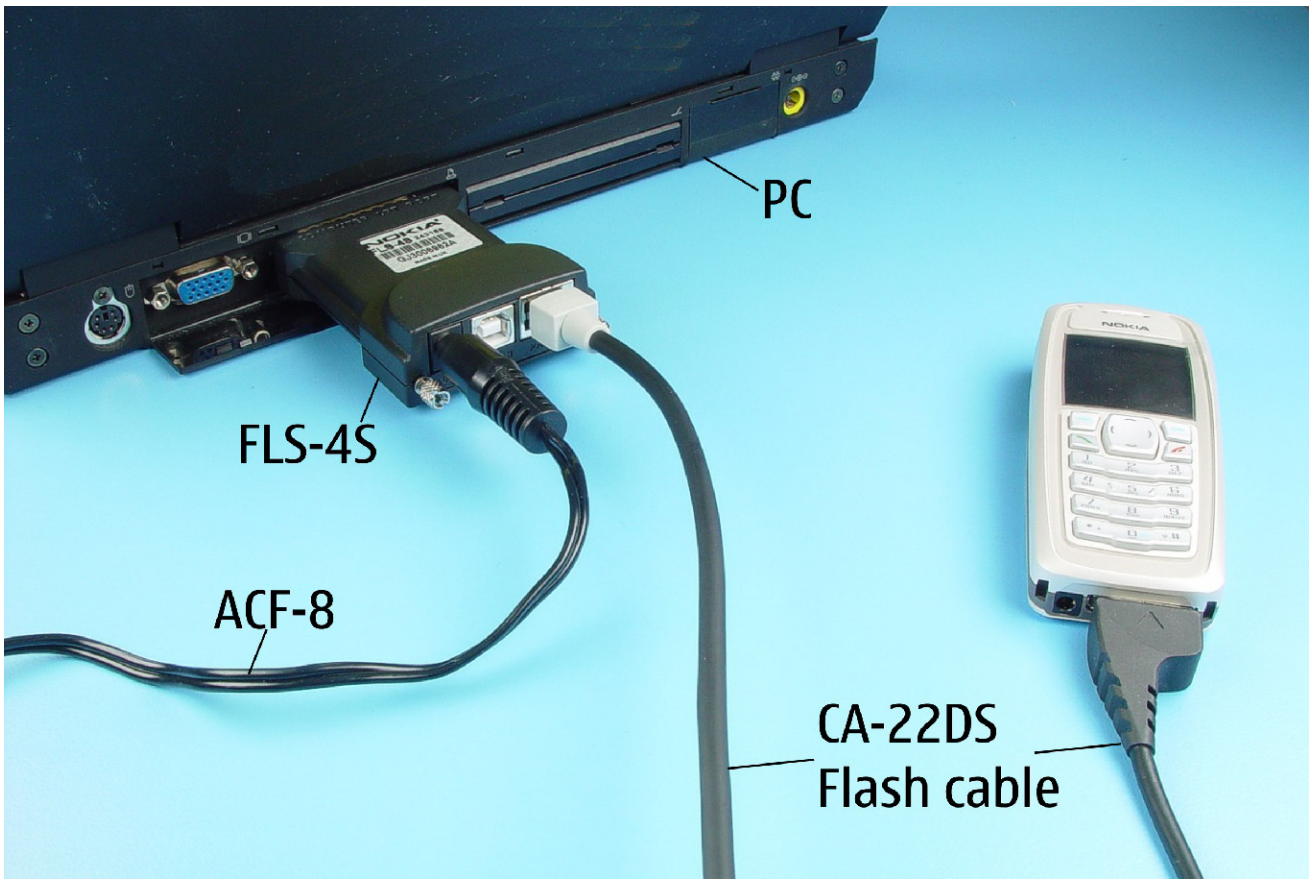
- Nokia opening tool SRT-6 Nokia No. 0770431
- Tonichi torque driver Nokia No. 6901525
- Hoya micro fibre cloth MX304
- Dastex gloves S, M, XL
- Artilux goggles AH166
- Wera bit T5 867/4TX 5x50
- Wera bit T6 867/4TX 6x50
- Wera bit T6 PLUS® 867/4TX 6IP
- Facom side cutter 416E
- Facom T5 driver SP.14032
- Facom T6 driver SP.14033
- Facom slot screwdriver AEF. 2x35.E
- Wetec tweezers 7abb SA-ESD
- Wetec tweezers 22 SA-ESD
- Wetec tweezers 13 SA-SMD ESD
- Wetec tweezers PSF SA-ESD
- Wetec ESD brush E1211
- Kaiser-Fototechnik airbrush 6315
- Wetec dental tool DEM83266/0
- RS-Components Scissors 323-5732

Copyright 2004 © Nokia Corporation

7. SW-UPDATE

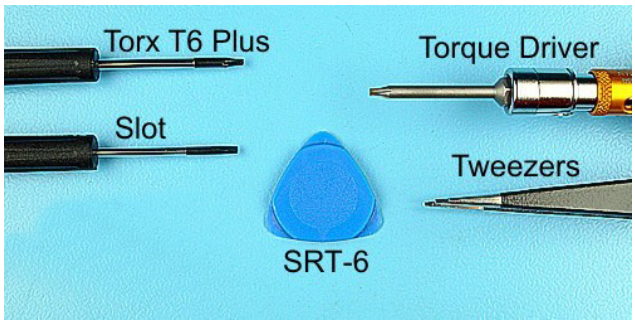
To use FLS-4S Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on
Nokia Partner Web Site / Nokia Online.

Flash Concept – (Point of Sales)

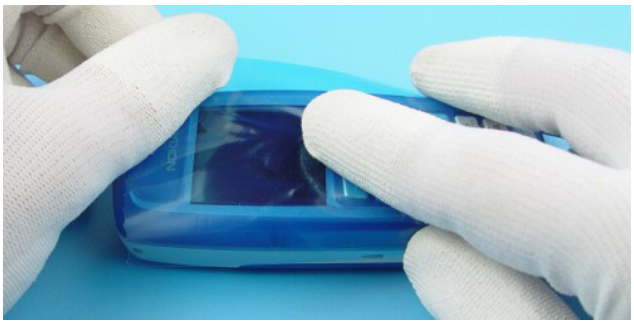


Copyright 2004 © Nokia Corporation

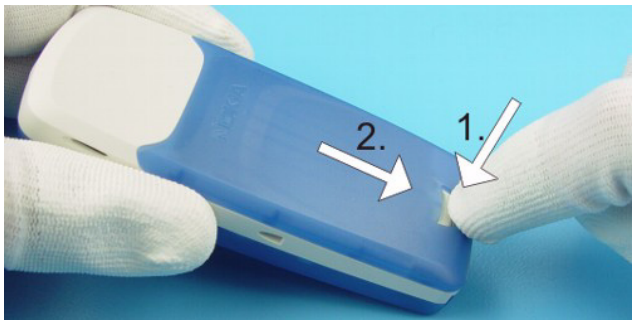
8. DISASSEMBLY INSTRUCTIONS (ALSO SEE THE VIDEO CLIPS ON CARE POINT)



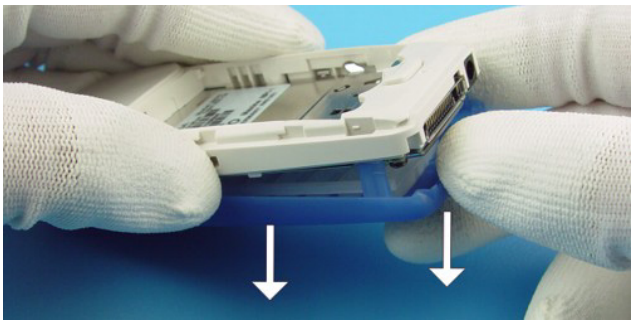
1) Needed tools for disassembly/assembly.



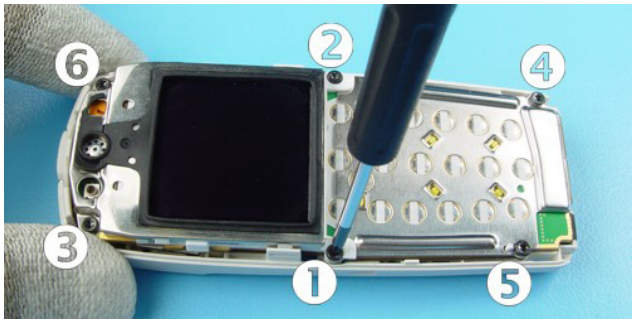
2) Protect the window with a protective film.



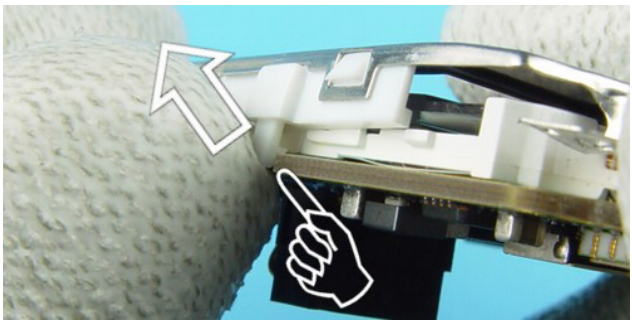
3) Press the **Release Button** before removing the **C-Cover**.



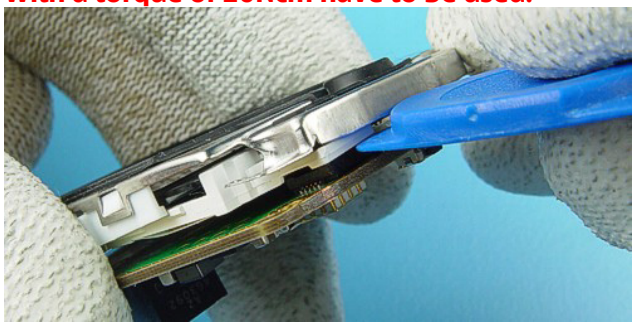
4) Remove the **A-Cover**.



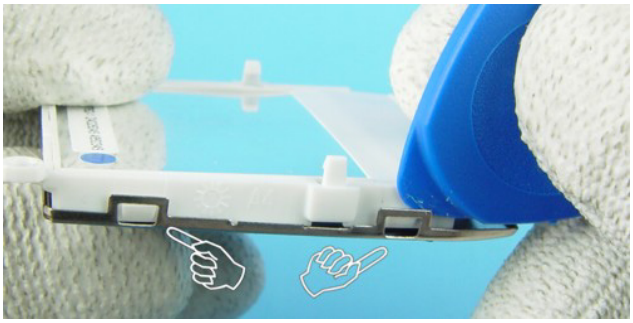
5) Unscrew the six Torx Plus® size 6 screws. **For assembly, the reverse order and a torque driver with a torque of 20Ncm have to be used.**



6) Open the snaps to prepare the removal of the **LCD Module.**

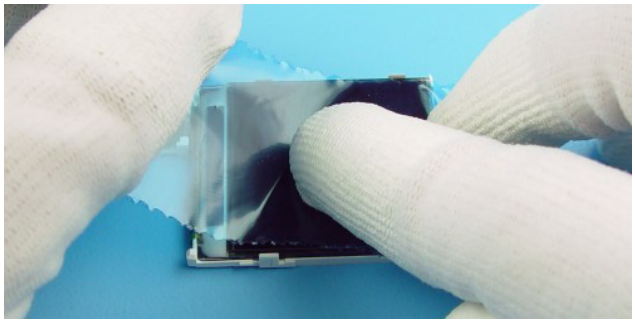


7) Separate the module from the **B-Cover** and unplug the display connector carefully by removing **UI-Shield** from **Engine Module**.

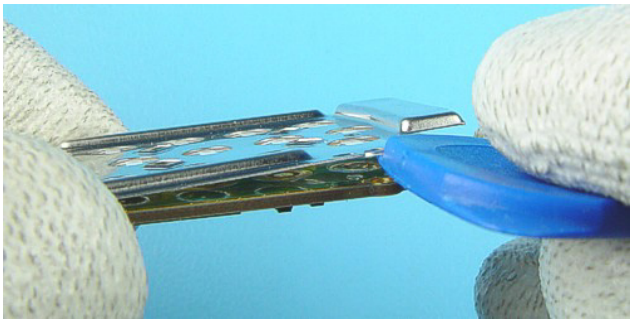


8) Remove the **Plastic Frame** from **LCD Module**.

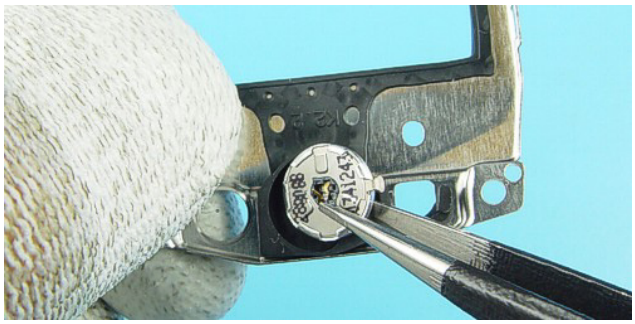
Copyright 2004 © Nokia Corporation



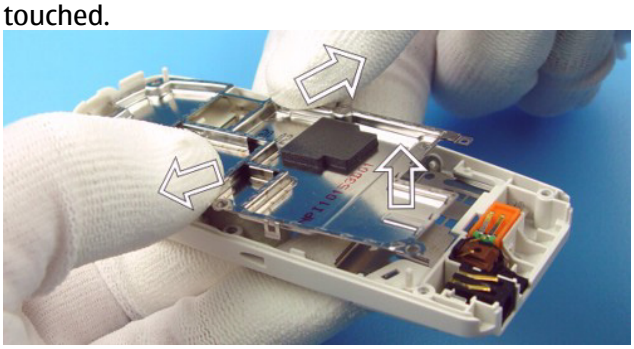
9) Protect LCD window with a protective film.



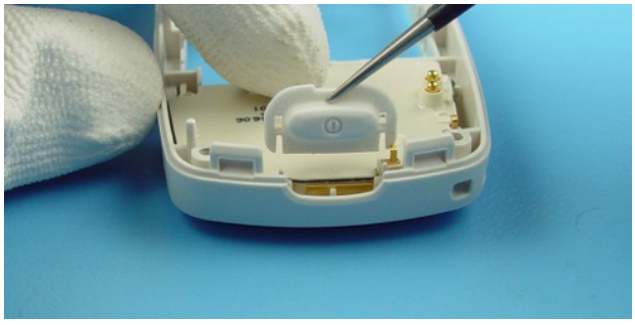
10) Separate the **Domesheet Frame Assy** from **Engine Module** carefully. The Domesheet is attached with adhesive tape, which must not be touched.



11) Remove the **Earpiece**. Note! Notice the guide pin when assembling.



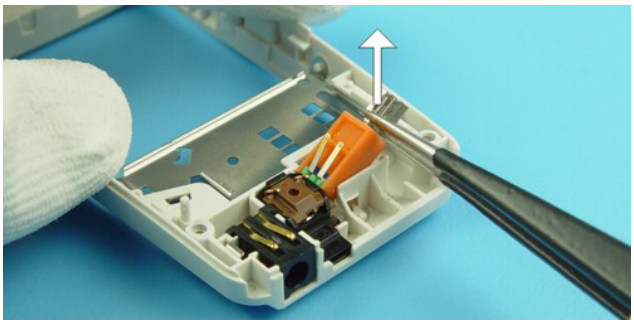
12) Remove the **Shielding** by expanding the **B-Cover.**



13) Remove the **Power Key**.

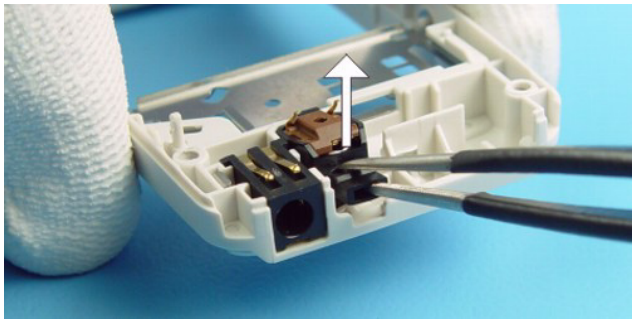
14) Use tweezers to lift up the **Antenna**.

15) Now, the **Antenna** can be removed.

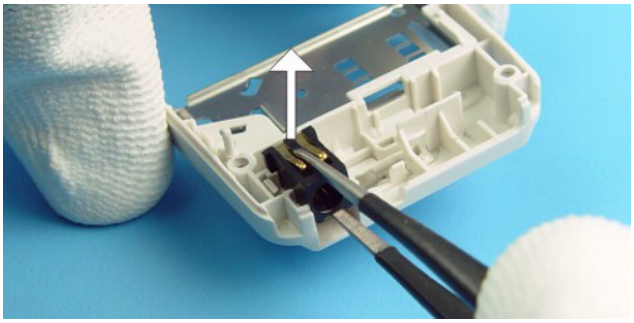


16) Remove the **Vibra Motor** with tweezers.

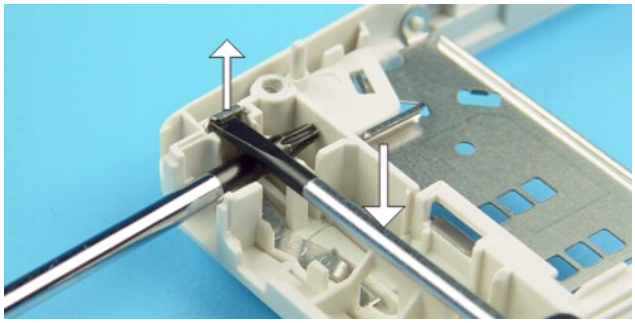
Copyright 2004 © Nokia Corporation



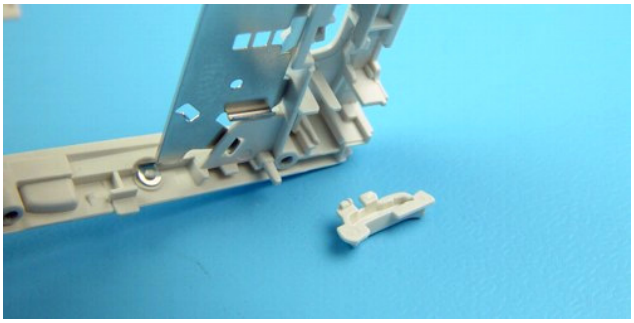
17) Remove the **Microphone** with tweezers.



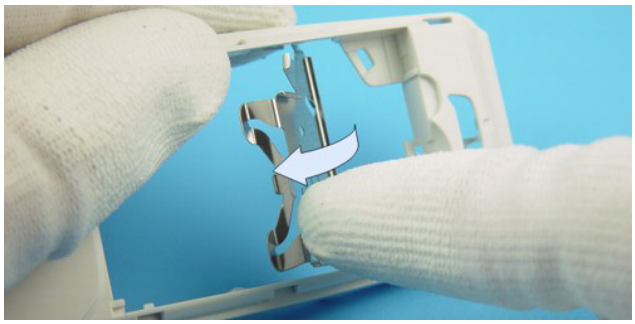
18) Remove the **DC-Jack** with tweezers. Be careful not to damage the spring contacts.



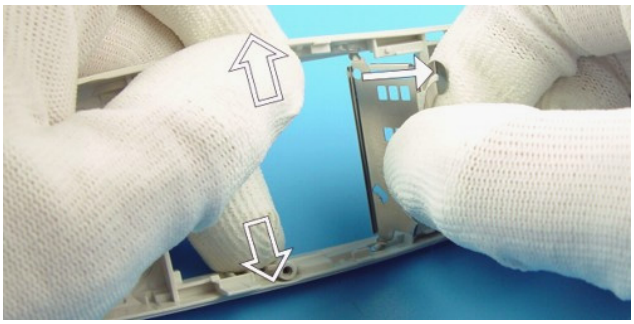
19) Remove the **Release Spring** by using the slotted screwdriver as a lever.



20) **Release Button** drops out when turning **B-Cover**.



21) Open **SIM-Flap** and turn it as shown in the picture.

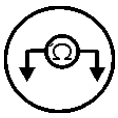


22) Expand **B-Cover** carefully and remove the **SIM-Flap**.

Copyright 2004 © Nokia Corporation

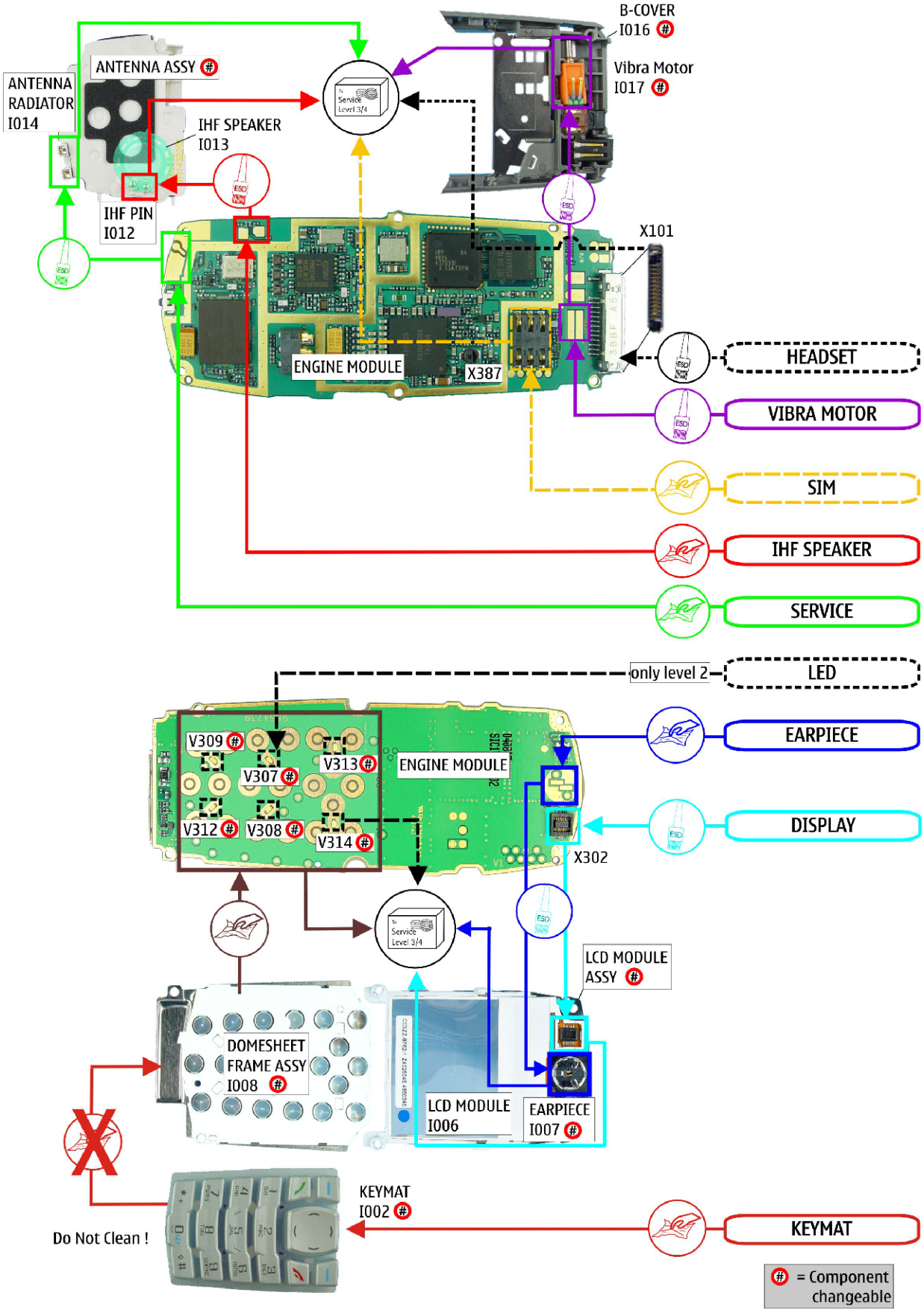
9. LEGEND FOR QUICK TROUBLE SHOOTER

This legend is valid for all parts of the **Quick Trouble Shooter**

Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward. Only marked components with this symbol (#) (e.g. **I002** #) can be changed.	
Fault symptom	The start point of repair activities regarding the appeared fault symptoms.
	Follow the arrows step by step
	Pads or contacts: Check optical and mechanical condition particularly regarding to corrosion. Clean if necessary.
	Measure component for electrical functionality and change, if needed. (Level 2 only)
	Pads or contacts: Check optical and mechanical condition particularly regarding to corrosion. Clean with ESD brush only, if necessary.
	No more actions possible send product to the appropriate service supplier with higher service level.

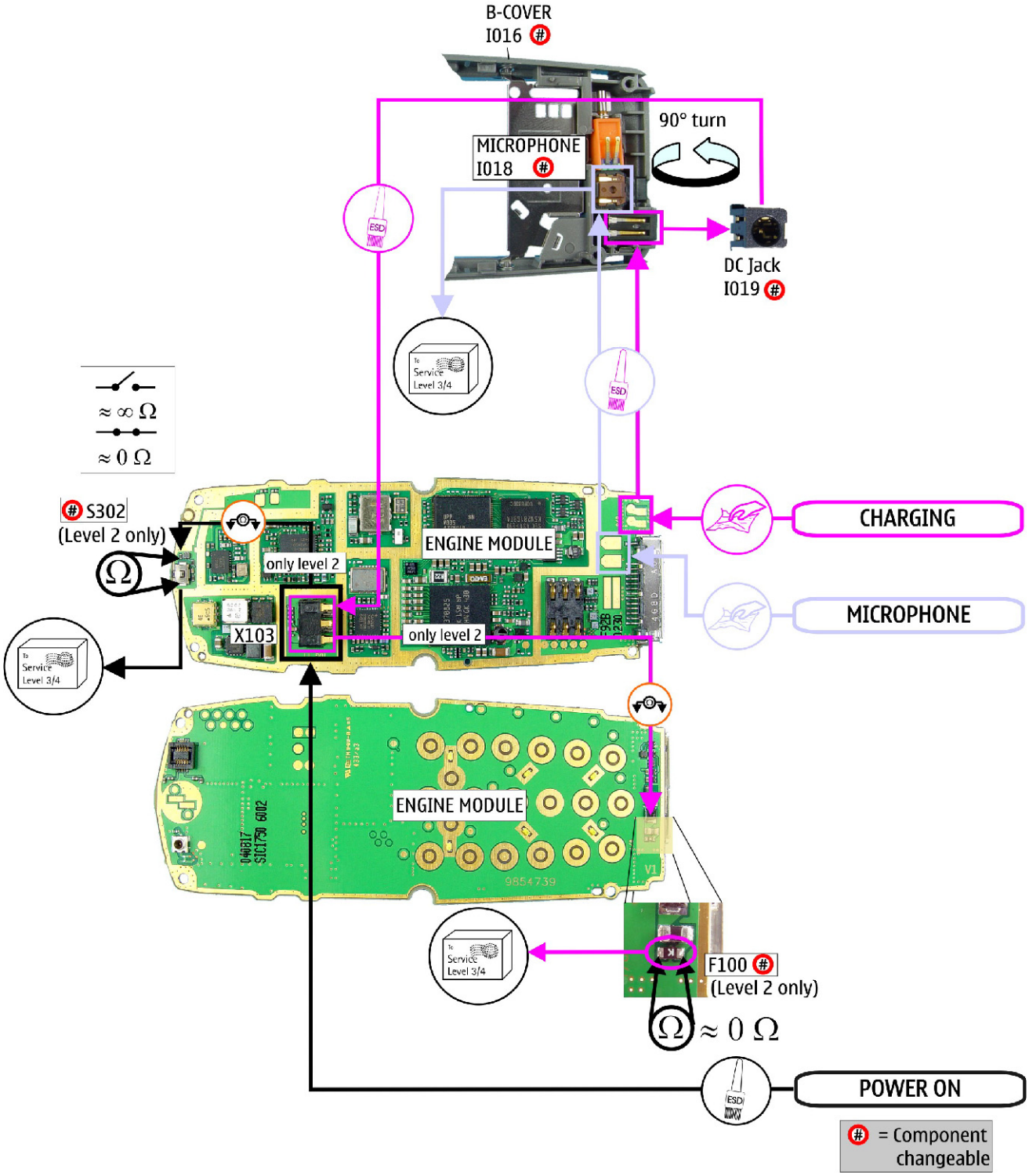
Copyright 2004 © Nokia Corporation

10. QUICK TROUBLE SHOOTER PART 1



Copyright 2004 © Nokia Corporation

11. QUICK TROUBLE SHOOTER PART 2



Copyright 2004 © Nokia Corporation

12. GONOGO TEST

After the optical check a GoNoGo test has to be carried out if the unit has been unscrewed to guarantee the functionality of the phone.

Please refer to the actual information on Partner Web Site/Nokia Online and Nokia Care Point. When using delivered tester support files, take care of the right setup according to the tester type and product type. Please refer to "Recommended Service Equipment" on Nokia Partner Web Site/Nokia Online.

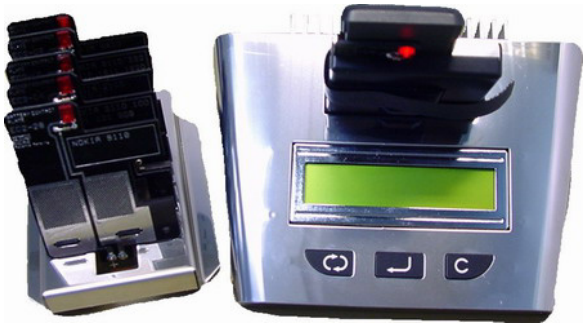
Mobile Phone Tester

Copyright 2004 © Nokia Corporation

13. BATTERY TEST

A battery tester lets you test the capacity of Nokia batteries.

Please refer to the actual information on Partner Web Site/Nokia Online.



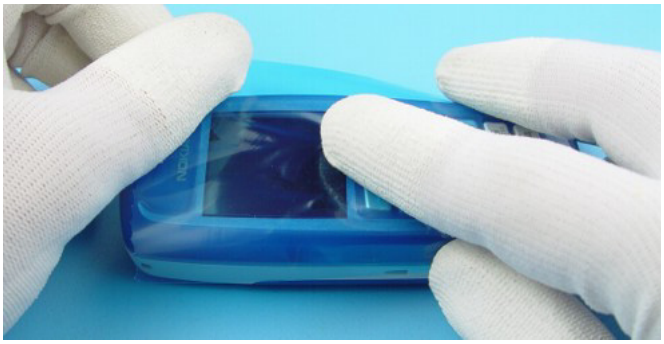
http://www.astratec.co.uk/

http://www.cadex.com/

Copyright 2004 © Nokia Corporation

14. FOR FORWARDING OF REPAIRS

When it is necessary to forward of repairs to appropriate service supplier with higher service level we recommend using the offered swap phone cartons as described in Spare Parts SB-004.



Always Protect the window with a protection film.

Put the unit under the stretch film.

Add repair documentation e.g. filled-in service note into the swap carton.

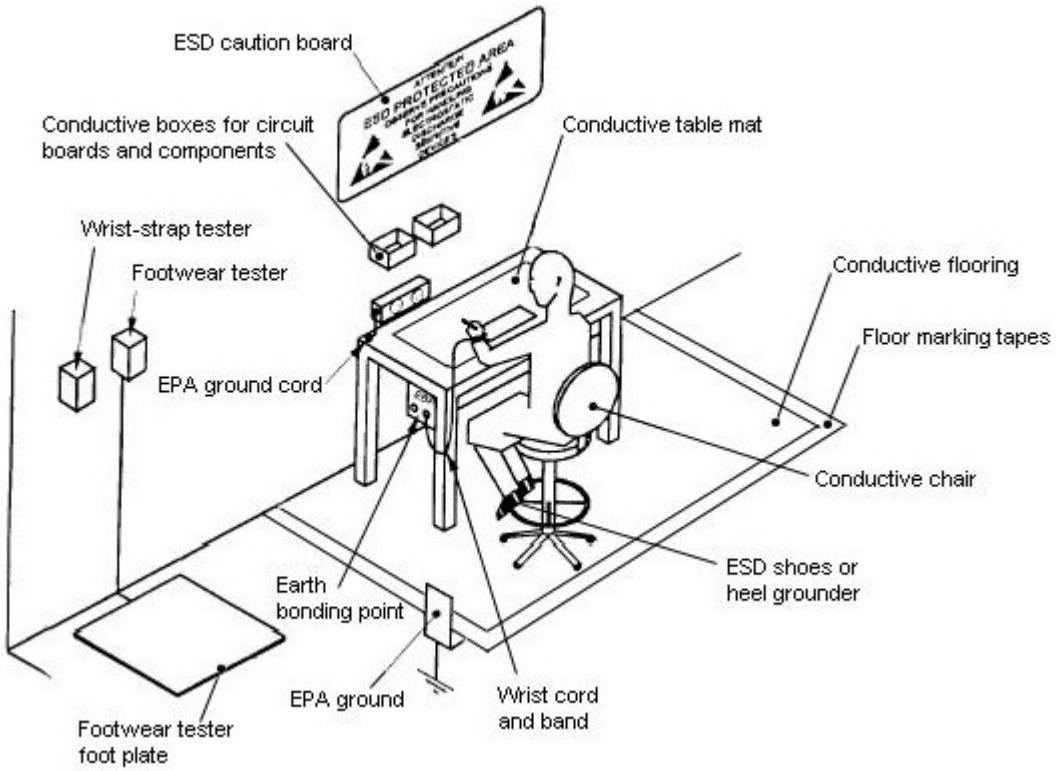
Fold the swap carton as shown in Spare Parts SB-004.

There are two different sizes of swap cartons for common mobile phones.

Copyright 2004 © Nokia Corporation

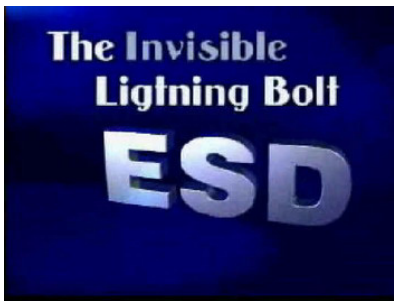
15. ESD PROTECTION REQUIREMENTS

Please refer to the Partner Web Site/Nokia Online document
Service Supplier Requirements in folder General instructions.



USE Conductive bags and boxes
USE ESD compatible service tools
USE Conductive wastebaskets
USE ESD gloves when handling PWBs/PCBs
USE Cleaning material without changing el. Characteristics
USE Grounded service equipment, i.e. soldering station
USE ESD clothes such as coat or frock

NO Smoking
NO Drinking
NO Eating
NO Dust
NO Useless Items
NO Normal pressured air for cleaning modules/displays



The video covers general issues concerning Electro-Static Discharge (ESD)
source: Nokia Care Point

Copyright 2004 © Nokia Corporation